

CLAIMS

I claim:

1. A method for mitigating the effects of printer dot placement errors
5 comprising:

providing a characterization of susceptibilities of a printer to printing
images with visible defects resulting from dot placement errors; and

analyzing color tones in an image in consideration of the characterization
to determine, for a plurality of image printing orientations, a likelihood of the
10 printer generating a printout of the image that has a visible defect resulting from
dot placement errors.

2. The method for mitigating the effects of printer dot placement
errors of claim 1, further comprising:

15 selecting an image printing orientation for the printer that lessens the
likelihood.

3. The method for mitigating the effects of printer dot placement
errors of claim 2, wherein selecting an image printing orientation includes
20 selecting from one of two image printing orientations that are rotated 180
degrees relative to each other.

4. The method for mitigating the effects of printer dot placement errors
of claim 1, wherein the susceptibilities depend upon a range of color values in the
25 image.

5. The method for mitigating the effects of printer dot placement errors
of claim 1, wherein the susceptibilities depend upon tone contrasts in the image.

30 6. The method for mitigating the effects of printer dot placement errors
of claim 1, wherein the susceptibilities depend upon one or more colors in the
image.

7. The method for mitigating the effects of printer dot placement errors of claim 1, wherein the susceptibilities depend upon one or more color transitions in the image.

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8. The method for mitigating the effects of printer dot placement errors of claim 1, wherein the susceptibilities depend upon a percentage of a fill area in the image that is white space.

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9. The method for mitigating the effects of printer dot placement errors of claim 1, wherein the susceptibilities depend upon spatial relationships between color dots and white spaces in the image.

10. The method for mitigating the effects of printer dot placement errors of claim 1, wherein the susceptibilities depend upon an amount of overlap between a fill area in the image and dots adjacent to the fill area.

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11. The method for mitigating the effects of printer dot placement errors of claim 1, wherein the susceptibilities depend upon positions of color dots that form the image on the piece of media.

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12. The method for mitigating the effects of printer dot placement errors of claim 11, wherein the color dots are blue.

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13. The method for mitigating the effects of printer dot placement errors of claim 11, wherein the color dots are pink.

14. The method for mitigating the effects of printer dot placement errors of claim 1, wherein the susceptibilities depend upon a distance between a component of the printer and a print zone of the printer.

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15. The method for mitigating the effects of printer dot placement errors of claim 14, wherein the component is a roller.

16. The method for mitigating the effects of printer dot placement errors of claim 14, wherein the component is a pinch roller.

17. The method for mitigating the effects of printer dot placement errors of claim 14, wherein the component is a pen.

18. The method for mitigating the effects of printer dot placement errors of claim 1, wherein the susceptibilities depend upon a distance between a pinch point and a print zone of the printer.

19. The method for mitigating the effects of printer dot placement errors of claim 1, wherein the susceptibilities depend upon a distance between a pen of the printer and a piece of media to be printed upon by the printer.

20. The method for mitigating the effects of printer dot placement errors of claim 1, wherein the susceptibilities depend upon a media type upon which the image is to be printed by the printer.

21. The method for mitigating the effects of printer dot placement errors of claim 1, wherein the susceptibilities depend upon a quality level at which the image is to be printed by the printer.

22. The method for mitigating the effects of printer dot placement errors of claim 1, wherein the visible defect is a band.

23. A method for mitigating the effects of printer dot placement errors comprising:

determining contrasts in image colors that cause a printer to print images with visible defects resulting from dot placement errors;

for each of a plurality of image printing orientations for an image, identifying regions of the image where dot placement errors can occur when using the printer to print the image;

5 analyzing the image to determine an incidence of the contrasts in the regions identified for each of the image printing orientations; and

selecting an image printing orientation with a lowest incidence of contrasts that are likely to cause the printer to generate a printout of the image that has a visible defect resulting from dot placement errors.

10 24. The method for mitigating the effects of printer dot placement errors of claim 23, wherein determining contrasts includes taking into consideration a distance between a component of the printer and a print zone of the printer.

15 25. The method for mitigating the effects of printer dot placement errors of claim 23, wherein determining contrasts includes taking into consideration a distance between a pinch point and a print zone of the printer.

20 26. The method for mitigating the effects of printer dot placement errors of claim 23, wherein determining contrasts includes taking into consideration a distance between a pen of the printer and a piece of media to be printed upon by the printer.

25 27. The method for mitigating the effects of printer dot placement errors of claim 23, wherein determining contrasts includes taking into consideration a media type upon which the image is to be printed by the printer.

30 28. The method for mitigating the effects of printer dot placement errors of claim 23, wherein determining contrasts includes taking into consideration a quality level at which the image is to be printed by the printer.

29. The method for mitigating the effects of printer dot placement errors of claim 23, wherein analyzing the image includes comparing the image colors of adjacent image pixels.

5 30. The method for mitigating the effects of printer dot placement errors of claim 23, wherein analyzing the image includes comparing the image colors along a feed direction of the printer.

10 31. The method for mitigating the effects of printer dot placement errors of claim 23, wherein the visible defect is a band.

 32. A method for mitigating the effects of printer dot placement errors comprising:

15 analyzing colors in an image to determine a likelihood of a printer generating a printout of the image that has a visible defect caused by dot placement errors; and

 determining whether the likelihood is sufficiently high to change an orientation of the image to be printed by the printer.

20 33. The method for mitigating the effects of printer dot placement errors of claim 32, further comprising:
 changing the orientation of the image.

25 34. The method for mitigating the effects of printer dot placement errors of claim 32, wherein analyzing colors takes into consideration a characterization of susceptibilities of the printer to printing images with visible defects resulting from dot placement errors.

30 35. The method for mitigating the effects of printer dot placement errors of claim 34, wherein the susceptibilities depend upon a range of color values in the image.

36. The method for mitigating the effects of printer dot placement errors of claim 34, wherein the susceptibilities depend upon tone contrasts in the image.

37. The method for mitigating the effects of printer dot placement errors of claim 34, wherein the susceptibilities depend upon one or more colors in the image.

38. The method for mitigating the effects of printer dot placement errors of claim 34, wherein the susceptibilities depend upon one or more color transitions in the image.

39. The method for mitigating the effects of printer dot placement errors of claim 34, wherein the susceptibilities depend upon a percentage of a fill area in the image that is white space.

40. The method for mitigating the effects of printer dot placement errors of claim 34, wherein the susceptibilities depend upon spatial relationships between color dots and white spaces in the image.

41. The method for mitigating the effects of printer dot placement errors of claim 34, wherein the susceptibilities depend upon an amount of overlap between a fill area in the image and dots adjacent to the fill area.

42. The method for mitigating the effects of printer dot placement errors of claim 34, wherein the susceptibilities depend upon positions of color dots that form the image on a piece of media.

43. The method for mitigating the effects of printer dot placement errors of claim 42, wherein the color dots are blue.

44. The method for mitigating the effects of printer dot placement errors of claim 42, wherein the color dots are pink.

45. The method for mitigating the effects of printer dot placement errors of claim 34, wherein the susceptibilities depend upon a distance between a component of the printer and a print zone of the printer.

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46. The method for mitigating the effects of printer dot placement errors of claim 45, wherein the component is a roller.

47. The method for mitigating the effects of printer dot placement errors of claim 45, wherein the component is a pinch roller.

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48. The method for mitigating the effects of printer dot placement errors of claim 45, wherein the component is a pen.

49. The method for mitigating the effects of printer dot placement errors of claim 34, wherein the susceptibilities depend upon a distance between a pinch point and a print zone of the printer.

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50. The method for mitigating the effects of printer dot placement errors of claim 34, wherein the susceptibilities depend upon a distance between a pen of the printer and a piece of media to be printed upon by the printer.

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51. The method for mitigating the effects of printer dot placement errors of claim 34, wherein the susceptibilities depend upon a media type upon which the image is to be printed by the printer.

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52. The method for mitigating the effects of printer dot placement errors of claim 34, wherein the susceptibilities depend upon a quality level at which the image is to be printed by the printer.

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53. The method for mitigating the effects of printer dot placement errors of claim 32, wherein the visible defect is a band.

54. A method for mitigating the effects of printer dot placement errors comprising:

analyzing colors in an image to determine, for different printing orientations of the image, a likelihood of a printer generating a printout of the image that has a visible defect caused by dot placement errors; and

selecting a printing orientation for the image depending upon the likelihood.

55. The method for mitigating the effects of printer dot placement errors of claim 54, wherein analyzing colors takes into consideration a characterization of susceptibilities of the printer to printing images with visible defects resulting from dot placement errors.

56. The method for mitigating the effects of printer dot placement errors of claim 55, wherein the susceptibilities depend upon a range of color values in the image.

57. The method for mitigating the effects of printer dot placement errors of claim 55, wherein the susceptibilities depend upon tone contrasts in the image.

58. The method for mitigating the effects of printer dot placement errors of claim 55, wherein the susceptibilities depend upon one or more colors in the image.

59. The method for mitigating the effects of printer dot placement errors of claim 55, wherein the susceptibilities depend upon one or more color transitions in the image.

60. The method for mitigating the effects of printer dot placement errors of claim 55, wherein the susceptibilities depend upon a percentage of a fill area in the image that is white space.

61. The method for mitigating the effects of printer dot placement errors of claim 55, wherein the susceptibilities depend upon spatial relationships between color dots and white spaces in the image.

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62. The method for mitigating the effects of printer dot placement errors of claim 55, wherein the susceptibilities depend upon an amount of overlap between a fill area in the image and dots adjacent to the fill area.

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63. The method for mitigating the effects of printer dot placement errors of claim 55, wherein the susceptibilities depend upon positions of color dots that form the image on a piece of media.

64. The method for mitigating the effects of printer dot placement errors of claim 63, wherein the color dots are blue.

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65. The method for mitigating the effects of printer dot placement errors of claim 63, wherein the color dots are pink.

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66. The method for mitigating the effects of printer dot placement errors of claim 55, wherein the susceptibilities depend upon a distance between a component of the printer and a print zone of the printer.

67. The method for mitigating the effects of printer dot placement errors of claim 66, wherein the component is a roller.

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68. The method for mitigating the effects of printer dot placement errors of claim 66, wherein the component is a pinch roller.

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69. The method for mitigating the effects of printer dot placement errors of claim 66, wherein the component is a pen.

70. The method for mitigating the effects of printer dot placement errors of claim 55, wherein the susceptibilities depend upon a distance between a pinch point and a print zone of the printer.

5 71. The method for mitigating the effects of printer dot placement errors of claim 55, wherein the susceptibilities depend upon a distance between a pen of the printer and a piece of media to be printed upon by the printer.

10 72. The method for mitigating the effects of printer dot placement errors of claim 55, wherein the susceptibilities depend upon a media type upon which the image is to be printed by the printer.

15 73. The method for mitigating the effects of printer dot placement errors of claim 55, wherein the susceptibilities depend upon a quality level at which the image is to be printed by the printer.

74. The method for mitigating the effects of printer dot placement errors of claim 54, wherein the visible defect is a band.

20 75. A method for mitigating the effects of printer dot placement errors comprising:

providing access to a machine-readable program that, when executed, enables a processor to

25 analyze colors in an image to determine, for different printing orientations of the image, a likelihood of a printer generating a printout of the image that has a visible defect caused by dot placement errors, and

select a printing orientation for the image depending upon the likelihood.

30 76. An apparatus for mitigating the effects of printer dot placement errors comprising:

a memory device upon which is stored a machine-readable program that,

when executed, enables a printer to

analyze colors in an image to determine, for different printing orientations of the image, a likelihood of the printer generating a printout of the image that has a visible defect caused by dot placement errors, and

5 select a printing orientation for the image depending upon the likelihood.

77. An apparatus for mitigating the effects of printer dot placement errors comprising:

10 means for analyzing colors in an image to determine, for different printing orientations of the image, a likelihood of a printer generating a printout of the image that has a visible defect caused by dot placement errors, and for selecting a printing orientation for the image depending upon the likelihood; and
a printer configured to print the image according to the printing orientation
15 selected.

78. An apparatus for mitigating the effects of printer dot placement errors comprising:

 means for analyzing colors in an image to determine, for different printing
20 orientations of the image, a likelihood of a printer generating a printout of the image that has a visible defect caused by dot placement errors, and for providing an indication of the likelihood in relation to the different printing orientations; and

 a printer configured to allow a user of the printer to select a printing
25 orientation for the image in response to the indication and to print the image according to the printing orientation selected.

79. A printer with mitigated susceptibility to the effects of dot placement errors comprising:

30 means for printing an image in response to image data; and
a processor configured to generate the image data by

accessing a characterization of susceptibilities of a printer to printing images with visible defects resulting from dot placement errors,

analyzing color tones in an image in consideration of the characterization to determine, for a plurality of image printing orientations, a
5 likelihood of the printer generating a printout of the image that has a visible defect resulting from dot placement errors, and

identifying an image printing orientation for the printer that lessens the likelihood.

10 80. The printer with mitigated susceptibility to the effects of dot placement errors of claim 79, wherein the means for printing includes a pen.

81. The printer with mitigated susceptibility to the effects of dot placement errors of claim 79, wherein the means for printing includes an
15 inkjetting mechanism.

82. The printer with mitigated susceptibility to the effects of dot placement errors of claim 79, wherein the processor is configured to provide a print driver.
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83. The printer with mitigated susceptibility to the effects of dot placement errors of claim 79, wherein the susceptibilities depend upon a range of color values in the image.

25 84. The printer with mitigated susceptibility to the effects of dot placement errors of claim 79, wherein the susceptibilities depend upon tone contrasts in the image.

85. The printer with mitigated susceptibility to the effects of dot placement errors of claim 79, wherein the susceptibilities depend upon one or
30 more colors in the image.

86. The printer with mitigated susceptibility to the effects of dot placement errors of claim 79, wherein the susceptibilities depend upon one or more color transitions in the image.

5 87. The printer with mitigated susceptibility to the effects of dot placement errors of claim 79, wherein the susceptibilities depend upon a percentage of a fill area in the image that is white space.

10 88. The printer with mitigated susceptibility to the effects of dot placement errors of claim 79, wherein the susceptibilities depend upon spatial relationships between color dots and white spaces in the image.

15 89. The printer with mitigated susceptibility to the effects of dot placement errors of claim 79, wherein the susceptibilities depend upon an amount of overlap between a fill area in the image and dots adjacent to the fill area.

20 90. The printer with mitigated susceptibility to the effects of dot placement errors of claim 79, wherein the susceptibilities depend upon positions of color dots that form the image on the piece of media.

91. The printer with mitigated susceptibility to the effects of dot placement errors of claim 90, wherein the color dots are blue.

25 92. The printer with mitigated susceptibility to the effects of dot placement errors of claim 90, wherein the color dots are pink.

30 93. The printer with mitigated susceptibility to the effects of dot placement errors of claim 79, wherein the susceptibilities depend upon a distance between a component of the printer and a print zone of the printer.

94. The printer with mitigated susceptibility to the effects of dot placement errors of claim 93, wherein the component is a roller.

95. The printer with mitigated susceptibility to the effects of dot placement errors of claim 93, wherein the component is a pinch roller.

5 96. The printer with mitigated susceptibility to the effects of dot placement errors of claim 93, wherein the component is a pen.

97. The printer with mitigated susceptibility to the effects of dot placement errors of claim 79, wherein the susceptibilities depend upon a
10 distance between a pinch point and a print zone of the printer.

98. The printer with mitigated susceptibility to the effects of dot placement errors of claim 79, wherein the susceptibilities depend upon a distance between a pen of the printer and a piece of media to be printed upon
15 by the printer.

99. The printer with mitigated susceptibility to the effects of dot placement errors of claim 79, wherein the susceptibilities depend upon a media type upon which the image is to be printed by the printer.

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100. The printer with mitigated susceptibility to the effects of dot placement errors of claim 79, wherein the susceptibilities depend upon a quality level at which the image is to be printed by the printer.

25 101. The printer with mitigated susceptibility to the effects of dot placement errors of claim 79, wherein the visible defect is a band.